TRAITÉ DE COOPÉRATION EN MATIÈRE DE BREVETS

PCT

RAPPORT PRÉLIMINAIRE INTERNATIONAL SUR LA BREVETABILITÉ

(chapitre I du Traité de coopération en matière de brevets)

(règle 44*bis* du PCT)

Référence du dossier du déposant ou du mandataire FR2006/003	**POUR SUITE À DONNER** Voir le point 4 ci-dessous	
Demande internationale no. PCT/FR2007/000051	Date du dépôt international *(jour/mois/année)* 12 January 2007 (12.01.2007)	Date de priorité *(jour/mois/année)* 13 January 2006 (13.01.2006)
Classification internationale des brevets (8^{e}edition, sauf indication d'une #dition ant#rieure) Voir les informations pertinentes dans le formulaire PCT/ISA/237		
Déposant SANOFI-AVENTIS		

1. Le présent rapport préliminaire international sur la brevetabilité (chapitre I) est établi par le Bureau international au nom de l'administration chargée de la recherche internationale selon la règle 44*bis*.1.a).

2. Ce RAPPORT comprend un total de 7 feuilles, y compris la présente feuille de couverture.

   Dans les feuilles jointes, toute référence à l'opinion écrite de l'administration chargée de la recherche internationale doit être entendue, à la place, comme une référence au rapport préliminaire international sur la brevetabilité (chapitre I).

3. Le présent rapport contient des indications relatives aux points suivants :

☒	Cadre n° I	Base de l'opinion
☐	Cadre n° II	Priorité
☒	Cadre n° III	Absence de formulation d'opinion quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle
☐	Cadre n° IV	Absence d'unité de l'invention
☒	Cadre n° V	Déclaration motivée selon l'article 35.2) quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle; citations et explications à l'appui de cette déclaration
☐	Cadre n° VI	Certains documents cités
☐	Cadre n° VII	Certaines irrégularités relevées dans la demande internationale
☐	Cadre n° VIII	Certaines observations relatives à la demande internationale

4. Le Bureau international communiquera le présent rapport aux offices désignés conformément aux règles 44*bis*.3.c) et 93*bis*.1 mais pas avant l'expiration du délai de 30 mois à compter de la date de priorité (règle 44*bis*.2), sauf si le déposant a présenté une requête expresse à cet égard en vertu de l'article 23.2).

	Date d'établissement du présent rapport 09 September 2008 (09.09.2008)
Bureau international de l'OMPI 34, chemin des Colombettes 1211 Geneva 20, Switzerland no de télécopieur +41 22 338 82 70	Fonctionnaire autorisé Beate Giffo-Schmitt e-mail: pt03.pct@wipo.int

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	See form PCT/ISA/210
Applicant's or agent's file reference **FR2006/003**	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/FR2007/000051	**12.01.2007**	**13.01.2006**

International Patent Classification (IPC) or both national classification and IPC

A61K31/435 A61P9/00 A61P11/00 C07D519/00

Applicant

SANOFI-AVENTIS

1. This opinion contains indications relating to the following items:

☒	Box No. I	Basis of the opinion
☐	Box No. II	Priority
☒	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP	Date of completion of this opinion	Authorized officer
Facsimile No.		Telephone No.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/FR2007/000051

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed

   ☐ the translation of the international application into _____ , which is the language of a translation furnished for the purposes of international search (Rule 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ on paper

      ☐ in electronic form

   c. time of filing/furnishing

      ☐ contained in the international application as filed

      ☐ filed together with the international application in electronic form

      ☐ furnished subsequently to this Authority for the purposes of search

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 1-3(in part), 15-21(in part)

because:

☐ the said international application, or the said claims Nos. _____ relate to the following subject matter which does not require an international search (*specify*):

☐ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. _____ are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed (*specify*):

☒ no international search report has been established for said claims Nos. 1-13(in part), 15-21(in part)

☐ a meaningful opinion could not be formed without the sequence listing; the applicant did not, within the prescribed time limit:

- ☐ furnish a sequence listing on paper complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.
- ☐ furnish a sequence listing in electronic form complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.
- ☐ pay the required late furnishing fee for the furnishing of a sequence listing in response to an invitation under Rules 13*ter*.1(a) or (b).

☐ a meaningful opinion could not be formed without the tables related to the sequence listings; the applicant did not, within the prescribed time limit, furnish such tables in electronic form complying with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions, and such tables were not available to the International Searching Authority in a form and manner acceptable to it.

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in electronic form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☒ See Supplemental Box for further details.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

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Box No. V **Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	1-22	YES
	Claims		NO
Inventive step (IS)	Claims	1-22	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-22	YES
	Claims		NO

2. Citations and explanations:

D1: WO 03/084956 A (SANOFI-SYNTHELABO; BADORC, ALAIN; BONO, FRANCOISE; BORDES, MARIE-FRANC) 16 October 2003 (2003-10-16) cited in the application

D2: WO 2005/028476 A (SANOFI-AVENTIS; ALCOUFFE, CHANTAL; BADORC, ALAIN; BONO, FRANCOISE; BOR) 31 March 2005 (2005-03-31) cited in the application

The present application refers to agonist compounds of the FGF receptors corresponding to the general formula M_1-L-M_2 (claims 1-14 and 22), a pharmaceutical composition comprising an M_1-L-M_2 compound (claims 15-16), the use of these compounds in the preparation of a medication (claims 17-18), and a method of preparing an M_1-L-M_2 compound (claims 19-21).

The following examination is limited to the searched subject matter (see III).

The compounds of the present application differ from the compounds described in D1 and D2 (also described as FGF inhibitors) in that they contain two groups of indolizine liked together by a linker group L, whereas the compounds of D1 and D2 only contain one indolizine group.

Box No. V **Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Consequently, the subject matter of claims 1-22 is novel (PCT Article 33(3)).

Documents D1 and D2 are considered to be the prior art closest to the subject matter of the searched claims.

The problem addressed by the present invention can therefore be considered that of providing other compounds that can be used as FGF receptor inhibitors.

This problem has obviously been solved based on the description.

The solution proposed in claims 1-22 of the present application is considered inventive (PCT Article 33(3)) because the M_1-L-M_2 compounds represent a class of compounds having a pharmaceutical action that is not yet known for this action.

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of: III

The present claims 1-13 and 15-21 refer to a very broad range of compounds and their production and use. Support pursuant to PCT Article 6 and/or a disclosure pursuant to PCT Article 5, however, can only be found for a very limited number of these claimed compounds. In the present case, the claims are so lacking of support and the disclosure of the invention in the description is so limited that a significant search covering the entire claimed spectrum is impossible.

Consequently, the search was limited to the parts of the claims that are supported and disclosed, that is, the parts referring to the compounds of claim 1, of which:

the monomer units M1 and M2 are defined as in claim 3 and the linker group L is defined as in claim 14;

as well as pharmaceutical compositions containing these compounds and the use of these compounds to prepare a medication.